

**Claims**

What is claimed is:

- 5     1.     An integrated circuit device, comprising:  
         a controller; and  
         a serial trace port, wherein the serial trace port provides controller  
trace data and wherein the controller trace data is provided external to the  
integrated circuit device using a differential serial channel.
- 10     2.     The device of Claim 1, wherein the differential serial channel  
transmits data, control and timing information in a serial stream.
3.     The device of Claim 1, further comprising:  
15           a second controller, wherein the serial trace port also provides  
controller trace data of the second controller.
4.     The device of Claim 3, wherein the serial trace port receives a  
reference clock signal and provides a clock signal to each of the controller  
20     and second controller.
5.     The device of Claim 3, further comprising:  
         a trace buffer operatively coupled to the controller and the second  
controller; and  
25           a serializer, operatively coupled between the differential serial  
channel and the trace buffer, which converts a parallel data stream from  
the trace buffer to a serial data stream for the differential serial channel.


6. The device of Claim 1, further comprising:  
a trace buffer operatively coupled to the controller;  
a serializer, operatively coupled between the differential serial  
channel and the trace buffer, which converts a parallel data stream from  
5 the trace buffer to a serial data stream for the differential serial channel.
7. The device of Claim 6, wherein the parallel data stream comprises  
compressed data.
- 10 8. The device of Claim 5, wherein the serial trace port also provides a  
serializer clock signal to the serializer.
9. A test apparatus, comprising: /  
an electronic device comprising a plurality of controllers, a trace  
15 buffer operatively coupled to the plurality of controllers, and a differential  
transmitter operatively coupled to the trace buffer; and  
a workstation, operatively coupled to the electronic device, for  
communicating with the electronic device.
- 20 10. The test apparatus of Claim 9, further comprising a serializer,  
operatively coupled between the differential transmitter and the trace  
buffer, which converts a parallel data stream from the trace buffer to a  
serial data stream for the differential transmitter.
- 25 11. The test apparatus of Claim 10, wherein the electronic device further  
comprises a clock means for providing clock signals to each of the plurality  
of controllers and the serializer.
12. The test apparatus of Claim 10, wherein the parallel data stream  
30 comprises compressed data.

13. The test apparatus of Claim 9, further comprising a converter  
operatively coupled between the electronic device and the workstation for  
converting data received from the electronic device to a parallel data  
5 stream for use by the workstation.

14. The test apparatus of Claim 13, wherein the data received from the  
electronic device comprises data, control and clock information.

10 15. The test apparatus of Claim 14, wherein the converter relays test  
commands from the workstation to the electronic device.

16. The test apparatus of Claim 9, wherein the differential transmitter  
transmits a serial stream comprising data, control and clock information.  
15

17. A method of transforming trace data from a plurality of embedded  
controllers of an electronic device, comprising the steps of:   
storing trace data from each of the embedded controllers in memory;  
retrieving the trace data from the memory and converting the  
20 retrieved trace data to a serial stream; and  
transmitting the serial stream using at least one differential  
transmitter.

18. The method of Claim 17, further comprising a step of compressing  
25 the retrieved trace data prior to converting the retrieved trace data, such  
that the converting step converts compressed trace data to the serial  
stream.

19. The method of Claim 17, further comprising the steps of:  
receiving the transmitted serial stream and converting the received  
serial stream into a parallel stream; and  
displaying at least a portion of the parallel stream as controller trace  
5 data.
20. The method of Claim 19, further comprising a step of transmitting a  
second serial stream using a second differential transmitter.
- 10 21. The method of Claim 20, wherein the serial stream contains trace  
data of a first controller of the plurality of embedded controllers and the  
second serial stream contains trace data of a second controller of the  
plurality of embedded controllers.
- 15 22. The method of Claim 21, wherein the transmitted serial stream and  
the second serial stream each comprise data, control and clock information.
23. The method of Claim 17, wherein the transmitted serial stream  
comprises data, control and clock information.